



Please type a plus sign (+) inside this box <sup>TM</sup>



0350 2825

Based on PTO/SB/21 (05-03)  
Approved for use through 04/30/2003. OMB 0651-0031  
U.S. Patent and Trademark Office; U.S. DEPARTMENT OF COMMERCE  
Under the Paperwork Reduction Act of 1995, no persons are required to respond  
to a collection of information unless it displays a valid OMB control number.

<b>TRANSMITTAL FORM</b>  <i>(to be used for all correspondence after initial filing)</i>	<b>Application Number</b>	10/061,641
	<b>Filing Date</b>	1/31/2002
	<b>First Named Inventor</b>	Steven Teig, et al.
	<b>Group Art Unit</b>	2825
	<b>Examiner Name</b>	
<b>Total Number of Pages in This Submission</b>	<b>Attorney Docket Number</b>	SPLX.P0079

Enclosures (Check all that apply)		
<input type="checkbox"/> Fee Transmittal Form  <input type="checkbox"/> Fee Attached  <input type="checkbox"/> Amendment/Reply  <input type="checkbox"/> After Final  <input type="checkbox"/> Affidavits/declarations(s)  <input type="checkbox"/> Extension of Time Request  <input type="checkbox"/> Express Abandonment Request  <input checked="" type="checkbox"/> Information Disclosure Statement  <input type="checkbox"/> Certified Copy of Priority Documents  <input type="checkbox"/> Response to Missing Parts/ Incomplete Application  <input type="checkbox"/> Response to Missing Parts under 37 CFR 1.52 or 1.53	<input type="checkbox"/> Assignment Papers (for an application)  <input type="checkbox"/> Drawing(s)  <input type="checkbox"/> Licensing-related Papers  <input type="checkbox"/> Petition  <input type="checkbox"/> Petition to Convert to a Provisional Application  <input type="checkbox"/> Power of Attorney, Revocation Change of Correspondence Address  <input type="checkbox"/> Terminal Disclaimer  <input type="checkbox"/> Request for Refund  <input type="checkbox"/> CD, Number of CD(s) _____	<input type="checkbox"/> After Allowance Communication to Group  <input type="checkbox"/> Appeal Communication to Board of Appeals and Interferences  <input type="checkbox"/> Appeal Communication to Group (Appeal Notice, Brief, Reply Brief)  <input type="checkbox"/> Proprietary Information  <input type="checkbox"/> Status Letter  <input checked="" type="checkbox"/> Other Enclosures (Listed below): <b>Postcard Form 1449 26 cited references</b>
<b>Remarks:</b>		

SIGNATURE OF APPLICANT, ATTORNEY, OR AGENT	
<b>Firm Or Individual name</b>	Mani Adeli, Reg. No. 39,585 of Stattler Johansen & Adeli LLP
<b>Signature</b>	
<b>Date</b>	May 14, 2004

CERTIFICATE OF TRANSMISSION/MAILING			
I hereby certify that this correspondence is being facsimile transmitted to the USPTO or deposited with the United States Postal Services as first class mail in an envelope addressed to: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450, on this date: 5/14/2004			
<b>Typed or printed name</b>	Mani Adeli		
<b>Signature</b>		<b>Date</b>	5/14/2004

This collection of information is required by 37 CFR 1.5. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.14. This collection is estimated to 12 minutes to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.



PATENT  
Docket No. SPLX.P0079

CERTIFICATE OF MAILING BY "FIRST CLASS MAIL"

I hereby certify that this correspondence is being deposited with the United States Postal Service as first class mail in an envelope addressed to:  
Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450, on May 14, 2004.

Mani Adeli

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In the application of:

Steven Teig, et al.

Serial No.: 10/061,641

Filing Date: 1/31/2002

For: INTERCONNECT LINES WITH NON-  
RECTILINEAR POLYGONAL  
TERMINATIONS

INFORMATION DISCLOSURE  
STATEMENT UNDER 37 C.F.R. § 1.97

Commissioner for Patents  
P.O. Box 1450  
Alexandria, VA 22313-1450

Dear Sir:

Pursuant to 37 C.F.R. § 1.97 and § 1.98, applicants submit with this Information Disclosure Statement the attached Form PTO-1449, and copies of the documents listed in the 1449 form for consideration by the Examiner. The Examiner is requested to make these documents of record. Applicants would appreciate the Examiner initialing and returning the Form PTO-1449, indicating that the information has been considered and made of record herein.

This Information Disclosure Statement under 37 C.F.R. § 1.97 is not to be construed as a representation that: (i) a complete search has been made; (ii) additional information material to

the examination of this application does not exist; (iii) the information, protocols, results and the like reported by third parties are accurate or enabling; or (iv) the above information constitutes prior art to the subject invention.

This Information Disclosure Statement is submitted within three months of the application filing date or before the mailing date of a first Office Action on the merits; accordingly, no fee or separate requirements are required.

However, in the unlikely event that the Patent Office determines that additional fees, extension and/or other relief is required, applicant petitions for any required relief including extensions of time and authorizes the Assistant Commissioner to charge the cost of such petitions and/or other fees due in connection with the filing of this document to Deposit Account No. 50-1128 referencing SPLX.P0079. However, the Assistant Commissioner is not authorized to charge the cost of the issue fee to the Deposit Account.

Dated: May 14, 2004

Respectfully submitted,

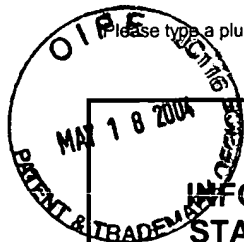
By: \_\_\_\_\_

**Mani Adeli**

Registration No. 39,585

Stattler, Johansen & Adeli LLP  
P.O. Box 51860  
Palo Alto, CA 94303-0728

Phone No. (650) 752-0990 x102  
Fax No. (650) 752-0995



Please type a plus sign (+) inside this box ☐

Based on PTO/SB/08 a & b (05-03)  
Approved for use through 05/31/2003. OMB 0651-0031  
U.S. Patent and Trademark Office; U.S. DEPARTMENT OF COMMERCE  
Under the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it contains a valid OMB control number

Substitute for form 1449A/PTO <b>INFORMATION DISCLOSURE STATEMENT BY APPLICANT</b> (use as many sheets as necessary)				Application Number	10/061,641
				Filing Date	1/31/2002
				First Named Inventor	Steven Teig
				Group Art Unit	2825
				Examiner Name	
Sheet	1	Of	4	Attorney Docket Number	SPLX.P0079

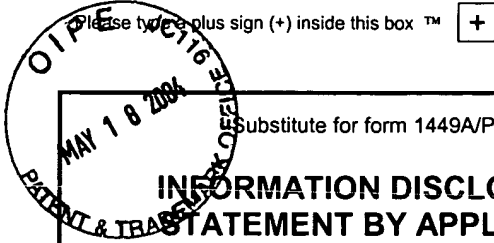
RELATED U.S. PATENT APPLICATIONS						
Examiner* Initials	Cite No. <sup>1</sup>	U.S. Patent Application		Name of Patentee or Applicant of Cited Document	Date of Filing MM-DD-YYYY	Related Application Data
		Serial Number	Attorney Docket Number			
	1.	10/066,060	SPLX.P0072	Steven Teig	01-31-2002	Application with the same specification and drawings as the present application, with the exception of summary and abstract.
	2.	10/066,160	SPLX.P0073	Steven Teig et al.	01-31-2002	Application with the same specification and drawings as the present application, with the exception of summary and abstract.
	3.	10/066,095	SPLX.P0074	Steven Teig et al.	01-31-2002	Application with the same specification and drawings as the present application, with the exception of summary and abstract.
	4.	10/066,047	SPLX.P0078	Steven Teig et al.	01-31-2002	Application with the same specification and drawings as the present application, with the exception of summary and abstract.
	5.	10/066,094	SPLX.P0080	Steven Teig et al.	01-31-2002	Application with the same specification and drawings as the present application, with the exception of summary and abstract.
	6.	10/076,121	SPLX.P0081	Steven Teig	02-12-2002	CIP of 10/066,094.
	7.	10/062,995	SPLX.P0105	Steven Teig et al.	01-31-2002	Application with the same specification and drawings as the present application, with the exception of summary and abstract.
	8.	10/066,102	SPLX.P0106	Steven Teig	01-31-2002	Application with the same specification and drawings as the present application, with the exception of summary and abstract.
	9.	10/066,187	SPLX.P0133	Steven Teig et al.	01-31-2002	Application with the same specification and drawings as the present application, with the exception of summary and abstract.
	10.	10/233,202	CDN.P0008	Steven Teig	08-28-2002	Per the preliminary amendment dated 5/30/03, this application is a CIP of the present application.
	11.	10/229,196	CDN.P0009	Steven Teig	08-26-2002	Per the preliminary amendment dated 5/30/03, this application is a CIP of the present application.

Examiner Signature		Date Considered	
-----------------------	--	--------------------	--

\* EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant. <sup>1</sup> Applicant's unique citation designation number(optional). <sup>2</sup> See Kinds Codes of USPTO Patent Documents at [www.uspto.gov](http://www.uspto.gov) or MPEP 901.04. <sup>3</sup> Enter Office that issued the document, by the two-letter code (WIPO Standard ST.3). <sup>4</sup> For Japanese patent documents, the indication of the year of the reign of the Emperor must precede the serial number of the patent document. <sup>5</sup> Kind of document by the appropriate symbols as indicated on the document under WIPO Standard ST. 16 if possible. <sup>6</sup> Applicant is to place a check mark here if English language Translation is attached.

This collection of information is required by 37CFR 1.97 and 1.98. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.14. This collection is estimated to take 2 hours to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing the burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.

If you need assistance in completing the form, call 1-800-PTO-9199 and select option 2.



Substitute for form 1449A/PTO				Application Number	10/061,641
<b>INFORMATION DISCLOSURE STATEMENT BY APPLICANT</b>  (use as many sheets as necessary)				Filing Date	1/31/2002
				First Named inventor	Steven Teig
				Group Art Unit	2825
				Examiner Name	
Sheet	2	Of	4	Attorney Docket Number	SPLX.P0079

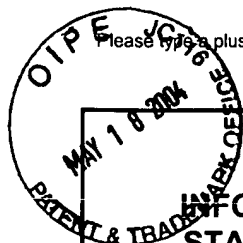
RELATED U.S. PATENT APPLICATIONS						
	12.	10/288,870	CDN.P0010	Steven Teig	11-06-2002	Per the preliminary amendment dated 5/30/03, this application is a CIP of the present application.
	13.	10/219,923	CDN.P0011	Steven Teig	08-14-2002	Per the preliminary amendment dated 5/30/03, this application is a CIP of the present application.

FOREIGN PATENT DOCUMENTS								
Examiner* Initials	Cite No. <sup>1</sup>	Foreign Patent Document			Date of Publication MM-DD-YYYY	Name of Patentee or Applicant of Cited Document	Pages, Columns, Lines, Where Relevant Passages or Relevant Figures Appear	T <sup>6</sup>
		Office <sup>3</sup>	Number <sup>4</sup>	Kind Code (if known) <sup>5</sup>				
	14.	JP	03-173471		07-26-1991	Tawada et al.	with Japanese Patent Office's English translation of Abstract; and with English translation of the application.	√
	15.	JP	04-000677		01-06-1992	Fujiwara et al.	with English translation of Abstract;	
	16.	JP	05-102305		04-23-1993	Sato	with Japanese Patent Office's English translation of Abstract; and with English translation of the application.	√
	17.	JP	05-243379		09-21-1993	Kubota	with Japanese Patent Office's English translation of Abstract; and with English translation of the application.	√
	18.	JP	07-086407		03-31-1995	Miura	with Japanese Patent Office's English translation of Abstract;	√

Examiner Signature		Date Considered	
-----------------------	--	--------------------	--

\* EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant. <sup>1</sup> Applicant's unique citation designation number(optional). <sup>2</sup> See Kinds Codes of USPTO Patent Documents at [www.uspto.gov](http://www.uspto.gov) or MPEP 901.04. <sup>3</sup> Enter Office that issued the document, by the two-letter code (WIPO Standard ST.3). <sup>4</sup> For Japanese patent documents, the indication of the year of the reign of the Emperor must precede the serial number of the patent document. <sup>5</sup> Kind of document by the appropriate symbols as indicated on the document under WIPO Standard ST. 16 if possible. <sup>6</sup> Applicant is to place a check mark here if English language Translation is attached.

This collection of information is required by 37CFR 1.97 and 1.98. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.14. This collection is estimated to take 2 hours to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing the burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.



Please type a plus sign (+) inside this box ☐

Based on PTO/SB/08 a & b (05-03)  
Approved for use through 05/31/2003. OMB 0651-0031  
U.S. Patent and Trademark Office; U.S. DEPARTMENT OF COMMERCE  
Under the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it contains a valid OMB control number

<b>INFORMATION DISCLOSURE STATEMENT BY APPLICANT</b>  (use as many sheets as necessary)				<b>Application Number</b>	10/061,641
				<b>Filing Date</b>	1/31/2002
				<b>First Named Inventor</b>	Steven Teig
				<b>Group Art Unit</b>	2825
				<b>Examiner Name</b>	
<b>Sheet</b>	4	<b>Of</b>	4	<b>Attorney Docket Number</b>	SPLX.P0079

### NON PATENT LITERATURE DOCUMENTS

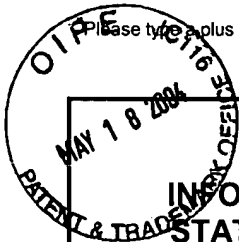
Examiner* Initials	Cite No. <sup>1</sup>	Include name of the author (in CAPITAL LETTERS), title of the article (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc.), date, page(s), volume-issue number(s), publisher, city and/or country where published.	T <sup>6</sup>
	21.	Berger, B. et al., Nearly Optimal Algorithms and Bounds for Multilayer Channel Routing, Journal of the Association for Computing Machinery, pp. 500-542, March 1995.	
	22.	Chen, H., Routing L-Shaped Channels in Nonslicing-Structure Placement. 24 <sup>th</sup> ACM-IEEE Design Automation Conference, pp. 152-165, 1987.	
	23.	Cheng, K. et al., Manhattan or Non Manhattan? A Study of Alternative VLSI Routing Architectures, pp 47-52, 2000.	
	24.	Chiang, C. et al., Wirability of Knock-Knee Layouts with 45° Wires, IEEE Transactions on Circuits and Systems, Vol. 38, Issue 6, pp 613-624, June 1991.	
	25.	NN71091316, Use of Relatively Diagonal And Rectangular Wiring Planes n Multilayer Packages, September 1971, IBM Technical Disclosure Bulletin, Vol. No. 14, Issue No. 4, pp. 1316-1317.	
	26.	Overtone, G., EDA Underwriter 2 Finding Space in a Multi-Layer Board, Electronic Engineering, Morgan-Grampian LTD, March 1995, vol. 67, no. 819, pp 29-30.	

<b>Examiner Signature</b>		<b>Date Considered</b>	
-------------------------------	--	----------------------------	--

\* EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant. <sup>1</sup> Applicant's unique citation designation number(optional). <sup>2</sup> See Kinds Codes of USPTO Patent Documents at [www.uspto.gov](http://www.uspto.gov) or MPEP 901.04. <sup>3</sup> Enter Office that issued the document, by the two-letter code (WIPO Standard ST.3). <sup>4</sup> For Japanese patent documents, the indication of the year of the reign of the Emperor must precede the serial number of the patent document. <sup>5</sup> Kind of document by the appropriate symbols as indicated on the document under WIPO Standard ST. 16 if possible. <sup>6</sup> Applicant is to place a check mark here if English language Translation is attached.

This collection of information is required by 37CFR 1.97 and 1.98. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.14. This collection is estimated to take 2 hours to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing the burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.

If you need assistance in completing the form, call 1-800-PTO-9199 and select option 2.



Please type a plus sign (+) inside this box <sup>TM</sup>



Based on PTO/SB/08 a & b (05-03)  
Approved for use through 05/31/2003. OMB 0651-0031  
U.S. Patent and Trademark Office; U.S. DEPARTMENT OF COMMERCE  
Under the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it contains a valid OMB control number

<b>Substitute for form 1449A/PTO</b>  <b>INFORMATION DISCLOSURE STATEMENT BY APPLICANT</b>  (use as many sheets as necessary)				<b>Application Number</b>	10/061,641
				<b>Filing Date</b>	1/31/2002
				<b>First Named Inventor</b>	Steven Teig
				<b>Group Art Unit</b>	2825
				<b>Examiner Name</b>	
<b>Sheet</b>	3	<b>Of</b>	4	<b>Attorney Docket Number</b>	SPLX.P0079

FOREIGN PATENT DOCUMENTS							
						and with English translation of the application.	
	19.	JP	09-162279		06-20-1997	Yoshida	with Japanese Patent Office's English translation of Abstract; and with English translation of the application. ✓
	20.	JP	2000-082743		03-21-2000	Igarashi et al.	with Japanese Patent Office's English translation of Abstract; and with English translation of the application. ✓

<b>Examiner Signature</b>		<b>Date Considered</b>	
---------------------------	--	------------------------	--

\* EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant. <sup>1</sup> Applicant's unique citation designation number(optional). <sup>2</sup> See Kinds Codes of USPTO Patent Documents at [www.uspto.gov](http://www.uspto.gov) or MPEP 901.04. <sup>3</sup> Enter Office that issued the document, by the two-letter code (WIPO Standard ST.3). <sup>4</sup> For Japanese patent documents, the indication of the year of the reign of the Emperor must precede the serial number of the patent document. <sup>5</sup> Kind of document by the appropriate symbols as indicated on the document under WIPO Standard ST. 16 if possible. <sup>6</sup> Applicant is to place a check mark here if English language Translation is attached.

This collection of information is required by 37CFR 1.97 and 1.98. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.14. This collection is estimated to take 2 hours to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing the burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.

If you need assistance in completing the form, call 1-800-PTO-9199 and select option 2.